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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.
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09/039,438 03/16/98 SHIN

W 041992-5037

IM62/0720

EXAMINER

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ART UNIT

PAPER NUMBER

1763

DATE MAILED:

07/20/99

Please find below and/or attached an Office communication concerning this application or proceeding.

Commissioner of Patents and Trademarks

Office Action Summary

Application No.
09/039,438

Applicant(s)
Shin, et al

Examiner
Powell, A.

Group Art Unit
1763



☐ Responsive to communication(s) filed on _____

☐ This action is **FINAL**.

☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11; 453 O.G. 213.

A shortened statutory period for response to this action is set to expire three month(s), or thirty days, whichever is longer, from the mailing date of this communication. Failure to respond within the period for response will cause the application to become abandoned. (35 U.S.C. § 133). Extensions of time may be obtained under the provisions of 37 CFR 1.136(a).

Disposition of Claims

☒ Claim(s) 1-18 is/are pending in the application.

Of the above, claim(s) _____ is/are withdrawn from consideration.

☐ Claim(s) _____ is/are allowed.

☒ Claim(s) 1-18 is/are rejected.

☐ Claim(s) _____ is/are objected to.

☐ Claims _____ are subject to restriction or election requirement.

Application Papers

☒ See the attached Notice of Draftsperson's Patent Drawing Review, PTO-948.

☐ The drawing(s) filed on _____ is/are objected to by the Examiner.

☐ The proposed drawing correction, filed on _____ is ☐ approved ☐ disapproved.

☐ The specification is objected to by the Examiner.

☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. § 119

☒ Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d).

☒ All ☐ Some* ☐ None of the CERTIFIED copies of the priority documents have been

☒ received.

☐ received in Application No. (Series Code/Serial Number) _____.

☐ received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

*Certified copies not received: _____

☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).

Attachment(s)

☒ Notice of References Cited, PTO-892

☒ Information Disclosure Statement(s), PTO-1449, Paper No(s). 3

☐ Interview Summary, PTO-413

☒ Notice of Draftsperson's Patent Drawing Review, PTO-948

☐ Notice of Informal Patent Application, PTO-152

— SEE OFFICE ACTION ON THE FOLLOWING PAGES —

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DETAILED ACTION

Claim Rejections - 35 USC § 112

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Claims 5, 10, 13-15 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

The term "predetermined" is considered to be indefinite because it does not quantify the parameters such as temperature and concentration. The applicant can overcome the rejection by canceling the term "predetermined".

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless --

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. Claim 1 is rejected under 35 U.S.C. 102(B) as being anticipated by Nelson.

Nelson discloses an etching process in which the etched product is covered with an aqueous liquid and the resulting liquid is passed through an ion exchanger to remove the ions from the rinse liquid which is reused or discharged. The solids are removed from the etcher via a stream which passes into a rinse chamber. The rinse liquid stream then goes through an ion

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exchanger means. A replenishing solution from the ion exchange means is combined with the stream of a bulk storage tank going to the etcher. The bulk storage tank has streams flowing to the etcher for etching the product and to the ion exchange means in order to regenerate the resin. (Fig. 1; col. 4, lines 49-68; col. 5, lines 35-55).

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claim 2 is rejected under 35 U.S.C. 103(a) as being unpatentable over Nelson in view of Tittle.

Nelson does not disclose expressly a temperature sensor.

Tittle et al disclose a process control system having a plurality of sensors for sensing various parameters. It would be obvious to a person of ordinary skill in the art that operating parameters for controlling the process may include temperature (abstract).

At the time of the invention it would have been obvious to a person of ordinary skill in the art to combine the chemical processing control system of Tittle with the etching apparatus of Nelson.

The motivation for doing so would have been to monitor, initiate corrective action and establish limits.

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Therefore, it would have been obvious to a person of ordinary skill in the art to combine Nelson with Tittle to obtain the invention as specified in claims 2.

7. Claims 3-18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nelson in view of Jones et al, Tittle and Salzle.

Nelson does not disclose expressly a rinse and drying bath for the substrate, a temperature sensor, a concentration measuring device and an etching solution which includes HF.

Jones et al disclose an chemical processing apparatus containing a plurality of treatment chambers having a dip chamber with filling pumps, a spray chamber which serves as a rinse chamber or a drying chamber (col. 2, lines 20-22, 39-39 and 63-68; col. 3, lines 1-10).

At the time of the invention it would have been obvious to a person of ordinary skill in the art to combine the chemical processing apparatus of Jones et al with the etching apparatus of Nelson.

The motivation for doing so would have been to provide a number of liquid treating operations for the manufacture of semiconductor devices.

Nelson and Jones et al do not disclose expressly a temperature sensor, a concentration measuring device and an etching solution which includes HF.

Tittle et al disclose a process control system having a plurality of sensors for sensing various parameters. It would be obvious to a person of ordinary skill in the art that operating parameters for controlling the process may include temperature and concentration .(abstract)

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At the time of the invention it would have been obvious to a person of ordinary skill in the art to combine the chemical processing control system of Tittle with the etching apparatus of Nelson and Jones et al.

The motivation for doing so would have been to monitor, initiate corrective action and establish limits.

Nelson, Jones et al, and Tittle do not disclose expressly an etching solution which includes HF.

Salzle discloses an etching solution containing hydrofluoric acid (abstract)

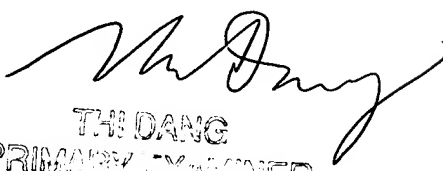
At the time of the invention it would have been obvious to a person of ordinary skill in the art to combine etching solution of Salzle with the etching apparatus of Nelson, Jones et al and Tittle.

The motivation for doing so would have been to provide an etchant that would appreciably etch the substrate.

Therefore, it would have been obvious to a person of ordinary skill in the art to combine Nelson with Jones et al, Tittle and Salzle to obtain the invention as specified in claims 2-18.

Conclusion

Any inquiry concerning this communication should be directed to Alva C. Powell at telephone number (703) 305-0541.


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